

## Case Study



### Infosys helps leading Aircraft Manufacturer adopt SOA leveraging IBM WPS

---

#### Abstract

The client, a World Leader in Aircraft manufacturing, faced enormous Business and IT challenges in the process of delivering their very first instance of one of the world's largest Passenger Aircraft. The existing IT landscape posed a huge challenge in terms of the inability to provide for a boundary less information flow across their varied systems and locations. As a result the business was unable to reduce cost and cycle time, unable to maximize engineering productivity and meet customer requirements and deadlines. Infosys SOA solution demonstrated the complete lifecycle considering some of the key business processes such as aircraft design, design modification and transition phases. The SOA solution helped rationalize and harmonize the program interfaces across the landscape. Infosys also involved in the definition of SOA vision and strategy, formation of SOA Center of Excellence defining the SOA Governance framework and SOA Infrastructure solution.

For more information, contact [askus@infosys.com](mailto:askus@infosys.com)

## Client Description

Client is a World Leader in Aircraft Manufacturing. Has a global presence with a wide network of production and support facilities across the world. Reputed for its modern and sophisticated product line, has sold more than 5,000 aircrafts to over 200 customers worldwide. Client engaged Infosys to provide Architectural Direction and Product selection to Integrate applications running across multiple geographies, multiple technologies across many platforms.

## Problem Statement

The enterprise faced enormous Business and IT challenges in the process of delivering their first instance of one of the world's largest Passenger Aircraft. Apart from the numerous Product Engineering challenges, clearly the existing IT landscape posed a huge challenge in terms of the inability to provide for a boundary less information flow across their varied systems and locations. Due to the restricted information flow, design modifications for the aircraft parts or product structures were not effectively propagated across associated systems, which in turn affected the complexity of the product structure modification approval process. As a result the business was unable to reduce cost and cycle time, unable to maximize engineering productivity and meet customer requirements and deadlines.

The engineering architecture division began to realize that SOA could relieve most of their pain points. SOA solution was expected to harmonize the business processes and systems, to reduce the overall life cycle for design/product structure modifications and approval process. In addition, SOA Center of excellence was envisioned with defined and agreed strategy to establish sound SOA Governance models, define SOA roadmaps, and establish standards and service management guidelines from the long term perspective for the organization. The customer looked for a partner to harmonize their PLM and Systems and most importantly create a business case for SOA based on the existing pain points in the large aircraft programs and to actually show quick wins and long term benefits to business as a result of SOA transformation.

## Business Drivers and Objectives

The SOA solution was expected to prove the ability of service components to integrate the target PLM system. The objective of this engagement is to enable demonstration of SOA based Solutions to drive.

- Harmonization of Business Processes and Systems, between the central PDM instance and various other VPM instances (both internal and external instances) across the landscape
- Provide solutions based on the understanding of Common Business Processes across Aircraft Programs which can reap benefits of SOA
- Define Architecture to unify applications, interfaces and processes through one unified SOA based backbone
- Define SOA Governance models and SOA roadmap for effective service management from the long-term perspective for the organization

From the Infosys perspective, the main objective was to envisage the future state of solutions based on SOA to provide some key benefits to the organization.

- Usage of Common solutions, Common services across different Aircraft Programs
- Increase Business Process Performance through Business Process Monitoring and continuous improvements
- Reduce overall life cycle for product structure propagation from central PDM to various other internal and external applications across the landscape
- Accelerate use of COTS based components
- Optimization of Solution Development, Implementation and Operations
- Optimize Solution Training, Infrastructure and Support areas
- Develop frameworks for Exception management and Business Activity Monitoring
- Define common standards for Testing, Automation of Regression tests and define standards for Performance tests

# Infosys Approach

## SOA Conceptualization

- Study existing pain points for some of the critical processes for two Large Aircraft Programs
- Create a Business Case for SOA
- Product evaluation for SOA implementation (IBM and TIBCO)
- Build prototypes using the offering of both the Vendors
- SOA Vision and Strategy – Roadmap for SOA adoption

## SOA Architecture Definition

- SOA Reference Architecture that would guide implementation of SOA projects in the future
- SOA Pilot for the following critical processes
  - Configuration Conformity Management Process
  - Digital Mock ups in Customer Fulfillment Process
  - Extended Enterprise Scenario for one part of PLM Process
- Automated Testing Framework for SOA Pilot in order to facilitate validation for actual non-functional requirements

# Solution

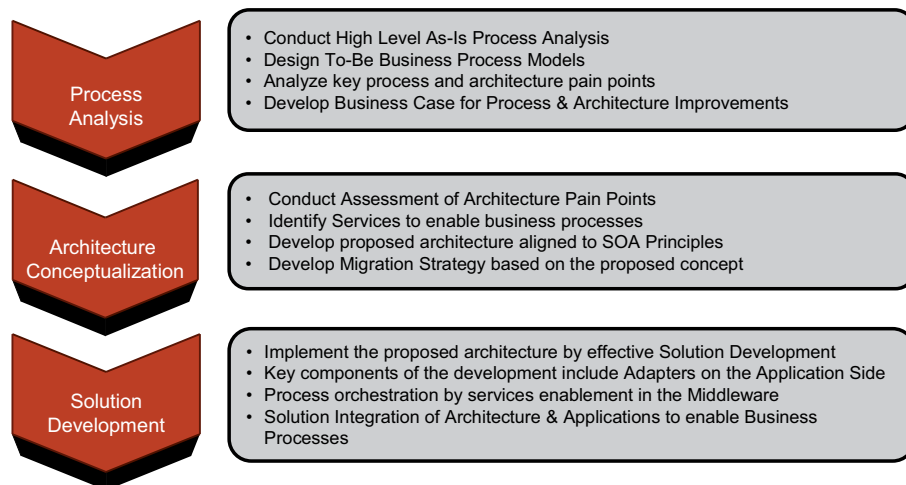
## SOA Solution Design

Infosys put together an excellent team of experts from various specialty groups such as Product Engineering Domain Consultancy, SOA and BPM consultants, IBM WPS specialists. The SOA business case created by Infosys was well received by the customer and became the stepping stone for the SOA definition phase across most aircraft programs

**Infosys SOA Assets:** Infosys proprietary SOA assets are being used all along the program from concept to the ongoing definition stage. For Example: InSOAP methodology, Service Specification Templates, SOA/BPM Best Practices etc. Infosys was also selected as the vendor to provide SOA/WPS development services after the successful implementation of SOA Prototype.

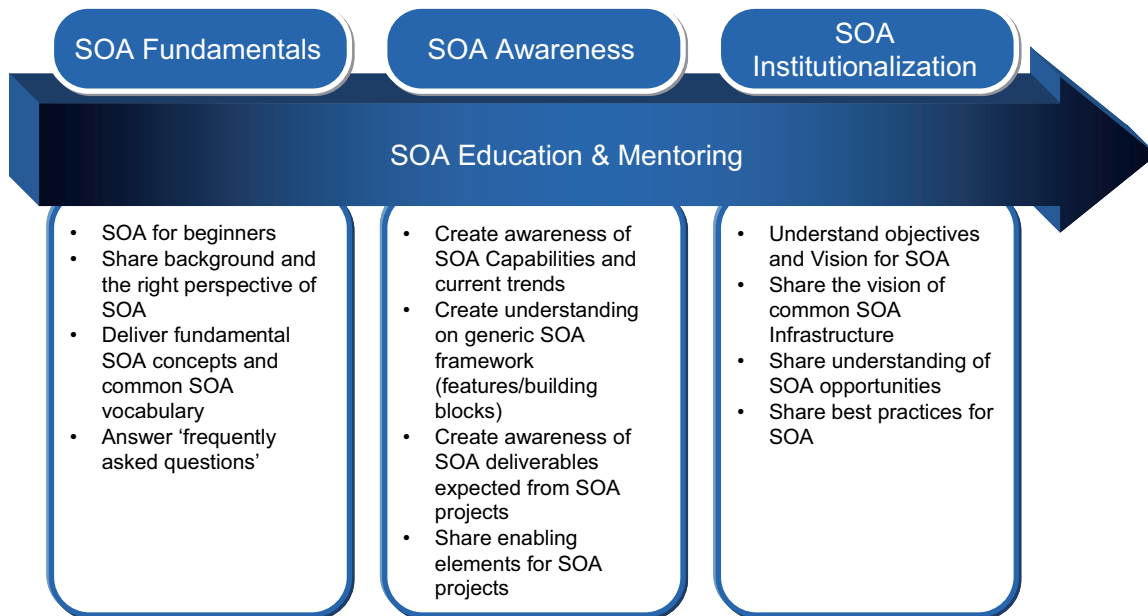
**IBM SOA Prototypes:** The prototype development was a part of the product selection exercise and Infosys demonstrated the solution on IBM WBI suite. IBM WPS 6.1 was relatively new at the time and was being used for the prototype. The client appreciated Infosys team effort in the quick ramp up on WPS 6.1.

The Infosys SOA Prototype Solution demonstrated complete BPM lifecycle taking some of the key business processes like New Initial Aircraft Design, Design modification and Transition phase. Sample KPI's were set, implemented and demonstrated using WBM. For example: User productivity measure for parts to reach 100% maturity level after design completion, End-to-end time taken for Design Solution Modification and User productivity measure for design modification at different life cycle stages.



SOA Initiative (SOA COE and Governance): This initiative was aimed at -

- Rationalization of account Program Interfaces and Integrations
- Solution harmonization across programs and landscape



## Benefits to Client

- Clear Road Map for SOA implementation
- SOA Governance and SOA Infrastructure management
- Define standards, procedures & guidelines for service management
- Focus on service reuse across enterprise, reduce integration efforts
- Provided inputs for Product Selection, ease of propagation of product structure changes across disparate systems/ applications
- Provided feasibility report about Interoperability of disparate applications
- Provided information to make architectural decisions
- Developed framework for Exception handling and Business Activity Monitoring
- Defined standards for Automated Regression Testing testing procedure



### About Infosys

Many of the world's most successful organizations rely on Infosys to deliver measurable business value. Infosys provides business consulting, technology, engineering and outsourcing services to help clients in over 30 countries build tomorrow's enterprise.

For more information about Infosys (NASDAQ:INFY), visit [www.infosys.com](http://www.infosys.com).

For more information, contact [askus@infosys.com](mailto:askus@infosys.com)